3.6 Regression

Investigate p 170
Curve of Best Fit- Quadratic Regression

$a = -5 \quad b = 25 \quad c = 30$

$f(x) = -5x^2 + 25x + 30$

$R^2 = 1.0 \Rightarrow 100\%$ confidence

Appendix p 564 & 565 Creating the Curve of Best Fit

Oct 12-8:11 AM

INVESTIGATE the Math

A ball is thrown into the air from the top of a building. The table of values gives the height of the ball at different times during the flight.

Time (s)	0	1	2	3	4	5
Height (m)	30	50	60	60	50	30

What is a function that will model the data?

A. Create a scatter plot, with an appropriate scale, from the data.

B. What shape best describes the graph? Draw a curve of good fit.

C. Extend the graph to estimate the location of the zeros.

D. Use the zeros to write an equation in factored form.

E. In what direction does the parabola open? What does this tell you?

F. Using one of the points in the table, calculate the coefficient of x^2. Write the equation for the data in factored form and in standard form.

G. Using a graphing calculator and quadratic regression, determine the quadratic function model.

Oct 12-9:28 AM

Reflecting

I. How does the factored form of an equation help you determine the curve of good fit?

J. How will you know whether the equation is a good representation of your data?

K. How would your model change if it has only one zero? What if the model has no zeros?

Quad Reg
$a = -5$
$b = 25$
$c = 30$

$f(x) = -5x^2 + 25x + 30$

$y = a(x - s)(x - t)$
$y = a(x + 1)(x - 6)$
$(5, 30)$
$30 = a(5 + 1)(5 - 6)$
$30 = a(6)(-1)$
$30 = -6a$
$-6 \quad -6$
$-5 = a$
$y = -5(x + 1)(x - 6)$

Oct 12-9:29 AM

p. 177-179 5-10, 14

p177 2 b)

Edit Lists
Quad Reg

Oct 12-10:32 AM

Oct 6-8:53 AM